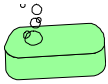


## Why is hand washing important?\*\*\*

The spread of infection requires: **1) a reservoir** of microorganisms; **2) a host** or a site for infection; and **3) a mode of transmission** between the reservoir and host. Humans, animals, and inanimate surfaces can serve as reservoirs; animals and humans can serve as hosts, and the hands of humans handling the animals often serve as a mode of transmission. **Stopping the spread of infection can be achieved by taking a few minutes each day to properly wash your hands.**

### When to Wash \*\*



- ✓ Before carrying out invasive procedures
- ✓ Before and after treating wounds
- ✓ Before handling any patient, particularly neonates or immunocompromised patients
- ✓ After coming in contact with equipment or fluids that are likely to be contaminated with microorganisms (i.e., mucous membranes, blood or body fluids, secretions, or excretions).
- ✓ After caring for an infected patient
- ✓ Between caring for patients that are at a high-risk of infection.

### Glossary of Hand Washing Terms\*

**Transient Flora:** Organisms which have recently contaminated the skin. These organisms are found on the skin surface and can survive for only a limited amount of time. These organisms can be readily transmitted unless they are removed. Removal is achieved primarily by the mechanical action of hand washing.

**Resident Flora:** Organisms which can be isolated from the skin of most people and are considered to be permanent residents. These organisms survive and multiply on the skin and can inhabit deep epidermal layers. Removal of resident flora requires an antimicrobial agent.

**Plain Soap:** A detergent-based cleanser used to physically remove dirt and contaminating organisms. It works by suspending microorganisms, thus allowing them to be mechanically removed by friction and the flushing action of water. The primary target of plain soap is transient organisms.

**Antimicrobial Soap:** A soap containing ingredients that kill organisms on the skin. Antimicrobial soaps work against resident as well as transient flora.

\* Adapted from *APIC guidelines for infection control practice: Guideline for use of topical antimicrobial agents*. Larson, E. RN, Ph.D., FAAN. American Journal of Infection Control. pp 256-257, (1988).

\*\* Adapted from *Guidelines for Hand Washing and Hospital Environment Control*. Center for Disease Control. (1985).

\*\*\* Adapted from *Overview of Hand Washing by Personnel in Animal Laboratory Facilities*. LeBlanc, D., MA. Contemporary Topics. pp 12-14, (1993).

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# Hand Washing

Why, When, How, and with What

Animal Health and Food  
Safety Services





When should you use an antimicrobial soap?



In many routine circumstances, thorough hand washing with plain soap may be effective. The decision of whether to use an antimicrobial agent should be based on whether it is important to reduce and maintain minimal counts of resident flora, and if an aid is necessary to eliminate transient flora. In some veterinary settings, the degree and type of contamination as well as the invasive nature of a procedure may warrant the use of an antimicrobial soap.

Choosing an antimicrobial soap:

- 1. Determine what characteristics are desired and identify which soap has those disinfection capabilities.
- 2. Review the safety and efficacy of the product’s final formulation. **This is very important because many antimicrobial agents are affected by environmental factors such as pH, the presence of detergents, and/or the oil to water ratio.**
- 3. Evaluate the product in terms of personnel acceptance and cost.

Characteristics of topical antimicrobial ingredients \*

Agent:	Alcohols	Chlorhexidine	Hexachlorophene	Iodine/iodophors	PCMX (chloroxylenol)	Triclosan (Irgaasan, DP-300)
Mode of action	Denaturation of protein	Cell wall disruption	Cell wall disruption	Oxidation/substitution by free iodine	Cell wall disruption	Cell wall disruption
Effect on_Bacteria						
Gram +	Excellent	Excellent	Excellent	Excellent	Good	Good
Gram -	Excellent	Good	Poor	Good	Fair	Good
Mycobacterium tuberculosis	Good	Poor	Poor	Good	Fair	Fair
Fungi	Good	Fair	Poor	Good	Fair	Poor
Viruses	Fair	Good	Poor	Good	Fair	Unknown
Speed of Action	Most rapid	Intermediate	Slow/intermediate	Intermediate	Intermediate	Intermediate
Residual Activity	None	Excellent	Excellent	Minimal	Good	Excellent
Advantages	Provide the most rapid and greatest reduction in microbial counts on skin	Persistence; efficacy is not significantly affected by organic matter	Persistence; efficacy is not significantly affected by soaps or organic matter	Has some activity against bacterial spores; has a wide range of activity	Activity is potentiated by EDTA	Appears to be non-allergenic and non-mutagenic
Disadvantages	Dry the skin **; are volatile and flammable	Efficacy is very formula dependent	Neurotoxicity; available by prescription only	Efficacy affected by organic matter; Skin irritation; possible toxic effects in sensitive people; requires 2 minutes of contact	Efficacy is very formula dependent	More safety and efficacy data are needed to determine its usefulness

\* Table adapted from *APIC guidelines for infection control practice: Guideline for use of topical antimicrobial agents*. Larson, E. RN, Ph.D., FAAN. American Journal of Infection Control. pp 256-257, (1988).  
\*\*Alcohols with an emollient mixture are still effective and result in less drying of the skin

Hand Washing Technique\*\*

**How you wash your hands is just as important as when you wash them and what soap you use.** Recommended hand washing technique depends on the purpose of the hand washing and the hand washing agent you are using. Always follow manufacturer’s labels when using antimicrobial soaps. The following procedure has been shown to be effective at removing transient flora with plain soap:



- 1) Lather your hands with soap;
- 2) Vigorously rub together all surfaces of lathered hands for **15-20 seconds**;
- 3) Rinse hands under a stream of water;
- 4) Dry hands with a paper towel.

**Note:** \* If hands are visibly soiled, more time may be required.  
\* Pay attention to the area under and around your fingernails or rings where bacteria may adhere.  
\* Only use bar soap from a dish that allows the water to drain. The wet soap film in the dish may serve as a reservoir for bacteria.  
\* Wearing gloves does not substitute for good hand washing practices. The moist environment between your skin and the glove is ideal for microbial growth. Wash your hands before and after wearing gloves.